

# INSTRUCTION MANUAL

## RINGCONE Variable speed Drive

## MODEL NRX-60 & 90 Series

Thank you for purchasing NRX Series Ringcone Variable Speed Drive. Please read this manual thoroughly before operation to insure that you receive full value and performance from this fine Shimpo product. We suggest you file this manual in a convenient place for future reference.

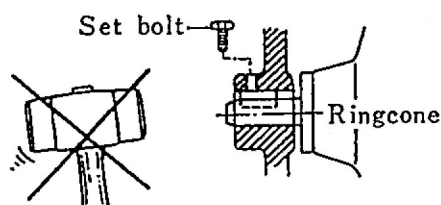
## 1. INSTALLATION

### 1-1 Location

- 1) Any mounting is available
  - \* If you intend to install it outdoors or where it will be subject to excessive dust or moisture, contact us for details.
- 2) Operation temperature range is 0°C to 40°C (32F to 104F).
  - \* Contact us if you intend to use this unit in high or low temperature environments.
- 3) Securely bolt this unit to a rigid, Vibration-free frame.
- 4) Installation place should be convenient for maintenance and inspection.

### 1-2 Connections

- 1) Allow sufficient rpm and torque margins.



- \* For driving the mated machine at its maximum speed, connect this unit so that it also runs at its maximum speed.
  - \* For machines that torque increases at lower speed, make sure the maximum torque of your Ringcone Variable Speed Drive is within the specified torque limits.
- 2) When connecting, do not apply impacts or excessive thrust loads to output and input shafts.

Note: The coupling, pulley chain sprocket, gear, etc. Shaft ends must be protected against impacts, vibrations and excessive thrust loads transmitted from the machine.

(Refer to catalog for permissible shaft loads.)

- 3) Perform centering properly for connections.
  - \* For connection with coupling  
Install your Ringcone Variable Speed Drive so that the center of its shaft is perfectly aligned with the center of the shaft of the mated machine.

- \* For connection with pulley, chain sprocket, gear, etc.

Set the shafts of your Ringcone Variable Speed Drive and the shaft of the mated machine so that they are perfectly parallel with one another.

## 2. OPERATION

### 2-1 Before operation

- 1) Unless otherwise specified, Ringcone Variable Speed Drives are shipped from the factory filled with the necessary quantity of lubricating oil. Therefore, no oil needs to be added.
- 2) Check if electrical wiring is proper.
- 3) Check if connection of the mated machine is proper. (fitting, centering, etc.)
- 4) When starting a new Ringcone Variable Speed Drive for the first time, check for correct rotational direction of output shaft and apply load gradually.

### 2-2 During operation

- 1) Can turn the speed change handle when the unit is stopped (when motor is not running).
- 2) Watch for the overloads.
- 3) Surface temperature of the case during normal operation is approximately the ambient temperature plus 40°C.
- 4) If output shaft speed is left below 100 rpm (not including speed reduction) for an extended period at the rated load, it would be economical to reduce load.
- 5) In the following cases, stop operation for inspection.

Conditions	Possible causes
* When temperature suddenly rises.	* The unit is overloaded.
* When noise suddenly becomes louder.	* Lubricating oil is excessive, insufficient or deteriorated, or different grade of oil is used.
* When revolution suddenly becomes unstable.	* Bearings and sliding surfaces are damaged.
* When other faults or defects are found.	* Connecting conditions with mated machine are improper.

### 2-3 Dial graduations and loads

NRX type Ringcone Variable Speed Drives run at a constant rpm unless the load changes. However, if the load changes drastically, rpm can change regardless of dial setting.

\*Note that revolution will change when the load changes greatly.

### 3. PERIODICAL INSPECTION

#### **3-1 Daily inspection**

- 1) Check for abnormally high temperatures during operation.
  - \* Proper temperature is the ambient temperature plus 40°C.
- 2) Check for abnormal noise in bearings, transmission area, etc.
- 3) Check for abnormal vibration.
  - \* If any abnormality is found, immediately stop the unit and inspect. If problem cannot be corrected, contact us.

#### **3-2 Periodical inspection (every three months)**

- 1) Check for excessive overload.
- 2) Check for loose set bolts on pulley, sprocket, and unit.
- 3) Check for electrical system defects.
- 4) Inspect and service major parts.
  - \* If abnormal sounds are generated, immediately stop the unit and disassemble it to inspect. If problem cannot be corrected, contact us.

# NIDEC-SHIMPO CORPORATION